

  
**UNIVERSITY OF MYSORE**  
Estd. 1916

VishwavidyanilayaKaryasoudha  
Crawford Hall, Mysuru- 570 005

No.AC2(S)/55/2024-25

Dated: 20.07.2024

**Notification**

**Sub:-**Syllabus and Scheme of Examinations of Food Science and Nutrition (UG) programme (I & II Semester) from the Academic year 2024-25.

**Ref:-**1. Decision of Board of Studies in Home science (UG) meeting held on 14-06-2024.

2. Decision of the Faculty of Science & Technology meeting held on 19-06-2024.


3. Decision of the Academic Council meeting held on 28-06-2024.

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The Board of Studies in Home science (UG) which met on 14-06-2024 has resolved to recommend & approved the Syllabus and Scheme of examinations Food Science and Nutrition of (UG) program with effect from the Academic year 2024-25.

The Faculty of Science & Technology and Academic Council at their meetings held on 19-06-2024 and 28-06-2024 respectively has also approved the above said Syllabus and Scheme of examinations hence it is hereby notified.

The Syllabus and Scheme of Examinations content may be downloaded from the University Website i.e., [www.uni-mysore.ac.in](http://www.uni-mysore.ac.in).

  
Registrar  
Registrar  
University of Mysore  
Mysore

**To:**

1. All the Principal of affiliated Colleges of University of Mysore, Mysore.
2. The Registrar (Evaluation), University of Mysore, Mysuru.
3. The Chairman, BOS/DOS in Home science (UG), University of Mysore, Mysore.
4. The Dean, Faculty of Science & Technology, DOS in Mathematics, MGM.
5. The Director, Distance Education Programme, Moulya Bhavan, Manasagangothri, Mysuru.
6. The Director, PMEB, Manasagangothri, Mysore.
7. Director, College Development Council, Manasagangothri, Mysore.
8. The Deputy Registrar/Assistant Registrar/Superintendent, Administrative Branch and Examination Branch, University of Mysore, Mysuru.
9. The PA to Vice-Chancellor/ Registrar/ Registrar (Evaluation), University of Mysore, Mysuru.
10. Office Copy.

**Annexure –I**

**University of Mysore, Mysuru**  
**Syllabus structure for 1<sup>st</sup> to 6<sup>th</sup> Semester**

**B. Sc. SEP 2024 (CBCS) Syllabus for Food Science and Nutrition as an Optional subject from the Academic Year 2024-25.**

Semester	Course No.	Course Category	Theory/ Practical	Credits	Paper Title	Marks	
						S.A	I.A
1.	FSNT-1 A	DSC-1	Theory	3	Human Physiology	80	20
	FSNP- 1.1 A		Practical	2	Human Physiology	40	10
2.	FSNT –1 B	DSC-2	Theory	3	Human Nutrition	80	20
	FSNP- 1.1 B		Practical	2	Human Nutrition	40	10
3.	FSNT –1 C	DSC-3	Theory	3		80	20
	FSNP – 1.1 C		Practical	2		40	10
4.	FSNT-1 D	DSC-4	Theory	3		80	20
	FSNP- 1.1D		Practical	2		40	10
5	FSNT-E1	DSE-1	Theory	3		80	20
	FSNP- E1.1		Practical	2		40	10
	FSNT-E-A1	DSE-2	Theory	3		80	20
	FSNP-E- A1.1		Practical	2		40	10
	FSNT- 1	SEC	Theory	2		80	20
6.	FSNT-E-B1	DSE- 1	Theory	3		80	20
	FSNP-E- B1.1		Practical	2		40	10
	FSNT-E-B1	DSE-2	Theory	3		80	20
	FSNP-E- B1.1		Practical	2		40	10
	FSNT -2	SEC	Theory	2		40	10

## SYLLABUS: FOOD SCIENCE AND NUTRITION

### I SEMESTER

Credits: 5 (L:T:P = 3:0:2)(3+4=7Hrs per week)

**DSC-A: Human Physiology**

**Paper code: FSNT/P1 48 + 64 = 112Hrs**

#### Objectives

1. To understand the structure and physiology of various organs
2. To obtain a better understanding of the principles of nutrition through the study of physiology
3. To provide an overview of the major macronutrients relevant to human health.

**DSC-A: Human Physiology (Theory) Paper code:FSNT-1A**

**3Credits= 48Hrs**

#### **Unit-1: Introduction to Human Body**

**10Hrs**

- A. Basic concepts of Organs, tissue and cell
- B. Cellular organelles – structure and functions
- C. Musculo – Skeletal System
- D. Sense Organs

#### **Unit-2: Circulatory Systems**

**14Hrs**

- A. Blood- Composition, blood groups and Functions
- B. Structure and Functions of Lymph System
- C. Cardiovascular system – Structure and functions of heart, Properties of Cardiac Muscle and Functional Tissues
- D. Cardiac Cycle, Heart Rate, Cardiac Output, Blood Pressure (Systolic & Diastolic Blood Pressure), ECG
- E. Respiratory System- Physiological Anatomy of Respiratory Tract, Mechanism of Respiration
- F. Transport of Respiratory Gases in blood, Gaseous Exchange in lungs and Tissues

#### **Unit-3: Digestive System and Excretory Systems**

**14Hrs**

- A. Digestive System – Principal organs of the Digestive system: Structure and function – Mouth (Tongue, Teeth), Oesophagus, Stomach, Small Intestine, Large Intestine
- B. Principal accessory Organs: Structure and Function-Salivary glands, Liver, Gall bladder, Pancreas
- C. Excretory System: Structure and Function – Excretory system, Kidney, Nephron
- D. Urine Formation, Glomerular Filtration Rate (GFR), Composition of Urine

#### **Unit-4: Nervous and Endocrine Systems**

**10Hrs**

- A. Nervous System- Structure and Functions of Neuron, Brain
- B. Central Nervous system, peripheral Nervous System
- C. Endocrine Systems: Structure and Functions – Pituitary, Thyroid and Parathyroid, Adrenals and Gonads
- D. Endocrine Functions of Pancreas, Heart, Liver, Kidney
- E. Reproduction System (in brief)

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**Course Outcomes:** At The end of the course the student should be able to

1. Gain the basic Knowledge of human anatomy and physiology
2. Define the main structures composing human body
3. Explain Structure and functions of cells, tissues and organs, systems of the human body
4. Relatively structures and functions of tissue
5. Provides excellent preparation for careers in the health professions and / or biomedical research

**Pedagogy:** Regular Lecturers, Demonstrations, Exercises on observation and follow up with group Discussions, case studies, ICT enabled teaching and learning experience in terms of video Lessons and documentary films shows.

**PRACTICALS      Human Physiology      Paper code:FSNP-1.1A      2 Credits= 64 Hrs**

### **Objectives**

1. To gain knowledge on the microscopic observation of various tissues and cells
2. To outline the principles of menu planning, ingredient composition of foods and meals, recipe construction for macronutrients.

### **LIST OF EXPERIMENTS**

1. Microscope and its Uses
2. Histology of epithelial, connective, muscular and nervous tissues
3. Enumeration of RBC and WBC Count.
4. Determination of pulse rate.
5. Determination of Blood Pressure.
6. Determination of Bleeding time and Coagulation Time.
7. Identification of Blood Group and RH factor.
8. Estimation of Haemoglobin (Sahlis's or Drabkin Method).
9. Qualitative Analysis of Albumin in samples.
10. Qualitative Analysis of Glucose in samples.
11. Institutional /field visits/trips

**Learning Outcomes** -Students will acquire skills

1. on operation of microscope, and identify different tissues and cells
2. on different types of measurements used in food processing
3. in Planning and standardization of macronutrient rich recipes for different age groups

## REFERENCES BOOKS

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## II SEMESTER

**Credits: 5 (L:T:P = 3:0:2)(3+4=7Hrs per week)**

**DSC-B: Human Nutrition Paper code: FSNT-1B 48 + 64 = 112Hrs**

### Objectives

1. Provide a solid knowledge base from which can describe and explain the importance of water, micronutrients and identify their roles within a functioning organism.
2. Discuss the scientific rationale for defining nutritional requirements in healthy individuals and populations
3. Know the aims and objectives for assessing the nutritional status of an individual and the community

### DSC-B: Human Nutrition (Theory)

**3 Credit= 48Hrs**

#### Unit 1: Definition of food, nutrition, health

**12Hrs**

- A. Introduction: Food and its relation to health, objectives in the study of nutrition
- B. RDA for various nutrients, age, gender, physiological state
- C. Energy: Definition, forms of energy, units of measurements, physiological fuel value of energy, determination of energy value of foods
- D. BMR – Definition, Determination and factors affecting energy requirements, diet induced thermo genesis (SDA)
- E. Water: Functions, requirements, sources

#### Unit 2: Macronutrients

**12Hrs**

- A. Protein – Classification, functions, digestion and absorption (in brief), RDA, sources and deficiencies.
- B. Carbohydrate - Classification, functions, digestion and absorption (in brief) RDA, sources and deficiencies. Dietary fiber – types and functions.
- C: Fat – Classification, functions, digestion and absorption (in brief), RDA, sources and deficiencies.

#### Unit 3: Micronutrient – Vitamins

**12Hrs**

- A. Fat soluble vitamins (A, D, E, K) – function, RDA, sources and deficiency and excess
- B. Water soluble vitamins: Thiamin, Riboflavin, Niacin, B12, Folic acid, Biotin and Vitamin C: functions, RDA, food sources, deficiencies and excess

#### Unit 4: Micro nutrient – Minerals

**12Hrs**

- A. Macro minerals – Calcium, Phosphorous and Magnesium, Sodium, Potassium, Chlorine: Functions, absorption, RDA, sources and deficiencies.
- B. Micro minerals – Iron, Zinc, Fluorine and Iodine: Functions, absorption, RDA, sources and deficiency

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## **Course outcome**

1. Gain knowledge in basic terminology, aspects of nutrition & functions of food in healthy life sustenance
2. Understand function of nutrients, dietary sources, consequence of deficiency and excess
3. Understand the food composition and concept of energy balance
4. Equip with knowledge and understanding on importance of water
5. Understand the nutritional management of deficiency disorders.
6. Understand the nutritional management of deficiency disorders.

**Pedagogy:** Regular class teaching, seminars and assignments and record works related to their practical works, field visits/trips.

**PRACTICALS**      **Human Nutrition Paper code:FSNP-1.1B**      **2Credit= 64 Hrs**

### **Objectives**

1. To learn the analytical steps to assay constituents present in blood and urine samples.
2. To identify and prepare meal rich in micronutrients and to learn the edible portions of commonly consumed fruits and vegetables.
3. To learn the methods for assessing the nutritional status of an individual and the community with standard measures and questionnaires.
4. Institutional /field visits/trips

### **LIST OF EXPERIMENTS**

1. Weights and measure –      a) Standard measures  
  b) Standardisation of hand and Household measures.
2. Identification of macronutrients rich food from food groups and derivation of mean nutritive value of each food groups.
3. Identification of micronutrients rich food from food groups and derivation of mean nutritive value of each food groups.
4. Development and Standardization of recipes for macro and micronutrients supplementation.
5. Recommended Dietary Allowances/ Nutritive values of foods.
6. Value addition/Enhancing the traditional recipes with specific nutrients (Protein, Carbohydrate, Fat, Vitamin A, Vitamin C, Calcium and Iron).

**Learning Outcomes** -Students will acquire skills

1. On planning, preparation of micronutrients rich recipe and compute requirements for different age groups.
2. On analytical technique for assessing Haemoglobin and constituents of urine sample.
3. to perform the methods used for assessment of nutritional status.

### **REFERENCES BOOKS**

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PROFORMA OF INSTRUCTION AND EXAMINATION FOR B. Sc. DEGREE IN FOOD SCIENCE AND NUTRITION CBCS SYSTEM-DURATION OF THE COURSE: 3 YEARS (6 SEMESTERS)

Semester	Paper	Title of the	Credits	Theory(100Marks)	Paper	Practical (50Marks)
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	code	paper	L:T:P= Total	C1	C2	C3	Total Marks	code	C1	C2	C3	Total Marks
I	FSNT-1A	Human Physiology	3:0:2=5	10	10	80	100	FSNP-1.1A	5	5	40	50
II	FSNT-1B	Human Nutrition	3:0:2=5	10	10	80	100	FSNP-1.1B	5	5	40	50
III	FSNT-1C		3:0:2=5	10	10	80	100	FSNP-1.1C	5	5	40	50
IV	FSNT-1D		3:0:2=5	10	10	80	100	FSNP-1.1D	5	5	40	50
V DSE Opt Any 1 elective	DSE-1A		3:0:2=5	10	10	80	100	DSE-1A	5	5	40	50
	DSE-2A		3:0:2=5	10	10	80	100	DSE-2A	5	5	40	50
SEC	SEC -1		2:0:0=2	5	5	40	50					
VI DSE Opt Any 1 elective	DSE-1B		3:0:2=5	10	10	80	100	DSE-1B	5	5	40	50
	DSE-2B		3:0:2=5	10	10	80	100	DSE-2B	5	5	40	50
SEC	SEC -2		2:0:0=2	5	5	40	50					

<b>Assessment Pattern</b> <b>Theory -10+10+80=100</b>	<b>Practical – 5+5+40=50</b>
<b>Internal assessment (20=10+10)</b> C1 : Test C2 : Seminar / Assignment <b>Semester End Examination</b> C3: SEE 80Marks	<b>Internal assessment (10=5+5)</b> C1: Record/ Report/ Assignment C2: Practical test <b>Semester End Examination- 40Marks</b> C3: Practical Proper (Record/ Report+ Viva+ Performance)-

**Theory Question Paper Pattern - 80Marks**

Part – A

**Answer all the questions:**

**(6X2=12)**

Question from 1 to 6

**Part – B**

**Answer any Six of the following questions:**

**(6X3=18)**

Question from 7 to 14

**Part – C**

**Answer any Four of the following questions**

**(4X5=20)**

Question from 15 to 20

**Part – D**

**Answer Three of the following questions:**

**(3X10=30)**

Question from 21 to 25